

CLAIMS

1. A method for automatically configuring a HART multidrop system, the system including at least one master device and a plurality of slave devices coupled to the master device, the method comprising the steps of:

connecting the slave devices;

switching on a power source of the master device for the slave devices;

transmitting a HART command "Write polling address" as a broadcast command from the master device with a polling address not equal to zero, the HART command being preprogrammed to cause the slave devices to (i) automatically switch to a multidrop mode and (ii) obtain an identical address not equal to zero; and

changing the corresponding addresses for the slave devices from the identical address to a unique address for each slave device.

2. A method for automatically configuring an existing HART multidrop system, the system including (i) at least one master device, (ii) a plurality of slave devices connected to the master device and (iii) at least one further slave device, the method comprising the steps of:

connecting the at least one further slave device;

switching off a power source of the master device for the slave devices if the power source is switched on;

switching on the power source for the slave devices;

transmitting a HART command "Write polling address" as a broadcast command from the master device with a polling address not equal to zero, the HART command being preprogrammed to cause the slave devices connected to the master device to (i) automatically switch to a multidrop mode and (ii) obtain an identical address not equal to zero; and

changing the addresses for the slave devices from the identical address to a unique address for each slave device.

3. The method according to claim 2, further comprising:
before the switching off step, checking if one of a supply voltage and a supply current for the slave devices is about zero.

4. The method according to claim 2, wherein the switching on is performed after a predetermined time interval after the switching off step to ensure that one of a voltage and a

current is not applied to the slave devices before the power source for the slave devices is switched on.

5 5. The method according to claim 2, wherein, in the HART command, the polling
address has a value between 1 and 15.

10 6. The method according to claim 2, wherein in one of the transmitting step and the
changing step, the unique address between 1 and 15 is entered for each slave device by an
operator in an inquiry routine.

15 7. The method according to claim 6, wherein, before entering of the unique address for a
particular slave device, it is determined if the particular slave device has already been
configured and, if the particular slave device has been configured, the same unique address is
again assigned to the particular slave device.

20 8. The method according to claim 7, wherein the HART command is transmitted with an
identifier for the particular slave device and a previously assigned address.

25 9. The method according to claim 6, wherein, in addition to entering of the unique
address for the particular slave device, an identifier corresponding to the particular slave
device is entered.

30 10. The method according to claim 9, wherein the identifier is a serial number of the
particular slave device.

35 11. A HART multidrop system, comprising:
 a plurality of slave devices; and
 at least one master device having a power source for the slave devices, the slave
 devices being coupled to the master device; and
40 a control unit switching on the power source to automatically configure the HART
multidrop system and transmits the HART command "Write polling address" as a broadcast
command with a polling address not equal to zero, the HART command causing each of the
slave devices connected to the master device to be automatically switched to a multidrop
mode and receive an identical address not equal to zero, the identical addresses for the slave
45 devices capable of being changed to individual addresses for each of the slave devices.

50 12. The HART multidrop system according to claim 11, wherein, before the power supply
is switched on, the control unit checks if one of a supply voltage and a supply current for the
slave devices is about zero.

55 13. The HART multidrop system according to claim 11, wherein the control unit is
programmed to switch on the power supply at a predetermined time interval after the
switching off process, thus ensuring that one of a voltage and a current is not applied to the
slave devices before the power supply is switched on.

14. The HART multidrop system according to claim 11, wherein the control unit runs an inquiry routine allowing an operator to enter a unique address of between 1 and 15 for each slave device.

5 15. The HART multidrop system according to claim 14, wherein, before the unique address is entered for a particular slave device, the control unit runs a checking routine to determine if the particular slave device has already been configured, and wherein if the particular slave device has been configured, the same unique address is assigned to the particular slave device.

10 16. The HART multidrop system according to claim 15, wherein the checking routine involves the HART command being transmitted with the identifier for the particular slave device and a previously assigned address.

15 17. The HART multidrop system according to claim 14, wherein an identifier characterizing the slave device is entered together with a unique address for the particular slave device.

20 18. The HART multidrop system according to claim 17, wherein the characterizing identifier is a corresponding serial number of the particular slave device.

19. The HART multidrop system according to claim 11, wherein, before switching on the power source, the power source is switched off.